Ecological Life Sciences
ISSN: 1308 7258 (NWSAELS)
ID: 2016.11.4.5A0080

Status : Original Study
Received: July 2016
Accepted: October 2016

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http://dx.doi.org/10.12739/NWSA.2016.11.4.5A0080

ON THE OCCURENCE OF JUVENILES AND EGG CAPSULES OF *Scyliorhinus Canicula* FROM THE NORTH-EASTERN MEDITERRANEAN SEA

ABSTRACT

Juveniles and egg capsules of smallspotted catshark *Scyliorhinus canicula* were obtained as by-catch from a commercial trawl fishing at depts between 300-398 m in the North-eastern Mediterranean Sea. Egg capsules and juveniles of *S. canicula* were identified for the first time in this region.

Keywords: *Scyliorhinus canicula*, Smallspotted Catshark, Egg Capsule, Juvenile, North-Eastern Mediterranean

KUZEYDOĞU AKDENİZ'DEKİ *Scyliorhinus Canicula*'nın YUMURTA KAPSÜLLERİ VE JUVENİLLERİN GÖRÜNÜRLÜĞÜ

ÖZ

Küçük kedi köpekbalığı *Scyliorhinus canicula*'nın yumurta kapsülleri ve juvenilleri Kuzeydoğu Akdeniz'de 300-398 m derinlik arasından ticari trol avcılığıyla yakalanarak elde edildi. *S. canicula*'nın yumurta kapsülleri ve juvenilleri bu bölgede ilk kez tespit edildi.

Anahtar Kelimeler: *Scyliorhinus canicula*, Küçük Kedi Köpekbalığı, Yumurta Kapsülü, Juvenil, Kuzeydoğu Akdeniz

1. INTRODUCTION

The smallspotted catshark (*Scyliorhinus canicula*) is a member of the family Scyliorhinidae. Its pectoral fins are relatively large and first dorsal fin is set behind the pelvic fins and the origin of the second dorsal fin is above the end of the anal fin. There are no dorsal spines. The caudal fin is long and almost straight with a large ventral lobe [1]. The nostrils are located on the underside of the snout and are connected to the mouth by a curved groove. The upper side of the body is grayish-brown with dark brown spots. The underside is a light greyish-white color. The teeth of *S. canicula* are larger in males than in females [2]. *S. canicula* is oviparous and they deposit egg cases protected by a horny capsule with long tendrils. Egg cases are mostly deposited on macroalgae in shallow coastal waters. When the egg cases are deposited farther from shore, they are placed on sessile erect invertebrates. Egg cases usually measure 4 cm by 2 cm, without ever exceeding 6 cm [3]. *S. canicula* is an opportunistic species, preying on a wide variety of organisms. Decapod crustaceans, mollusks, and fishes are their main prey, but echinoderms, polychaetes, sipunculids and tunicates may also be eaten [4 and 5]. Studies have shown that post-discard survival rates are extremely high, around 98%.

2. RESEARCH SIGNIFICANCE

This species is currently listed as "Least Concern" on the IUCN Red List of Threatened Species, because there is no evidence to indicate that the global population has declined significantly. There are currently no conservation actions in the Mediterranean for this species. This study is to describe potential nursery and egg laying areas of *S. canicula* in the North-eastern Mediterranean. Thus, this study provides the first record of eggs and juvenile smallspotted catsharks for the same area.

3. MATERIALS AND METHODS

Egg capsules and juveniles of *S. canicula* specimens were obtained as by-catch, during commercial trawl fishing in the international waters of the North-eastern Mediterranean (between 36° 08′ 232 N - 35° 07′ 975 E and 36° 06′ 436 N - 35° 22′ 493 E) at 300-398 m depths on the 12th of June 2015. Fish samples were transported to the laboratory of the Fisheries Faculty of Fırat University where they were identified, sexed and photographed. Morphometric measurements of the specimens were taken to the nearest 1 mm and the weight of each specimen was measured with a digital scale to the nearest 0.01 g (Total length, fork length, precaudal length, predorsal length, head length, prebranchial length, preorbital length, preanal length, eye length [6]). By opening abdomen a portion of the examples of egg and egg diameter was measured. Other *S. canicula* specimens were preserved at the Museum of Fisheries Faculty, Fırat University.

4. FINDINGS AND DISCUSSIONS

During the research eggs in different sizes and colors eggs have been identified in the ovaries, this colour change opaque white or dirty yellow and light green is a colour egg will pass to capsule. The length at which lesser spotted cat shark began laying eggs during the years of the present study was 51 cm. The largest egg diameter was measured as 7.45 mm and the smallest 1.4 mm. The smallest egg sac diameter was 4.3 mm; the largest egg sac has been identified as 19.8 mm in diameter (Fig 1). Capape et al., (1991) reported that a female gives average 17 egg capules at a time [7]. However; in this study, in

the oviduct has not been demonstrated more than two egg capsules. Similar observation was reported by Cihangir et al., (1997) [8].

Figure 1. Representation of egg capsules and egg sac females S. canicula from North-eastern Mediterranean Sea

All morphometric measurements of the juveniles smallspotted catshark are given in Table 1. Total lengths and weights of the females and males of *S. canicula* were 12.5-15.6 cm and 3.79-9.48 g, respectively (Fig 2). The size at hatch was previously reported as 7 to 11 cm for *S. canicula* by Ellis and Shackley (1997) [3]. Thus, this study provides the first record of eggs and juveniles of smallspotted catshark from the North-eastern Mediterranean Sea. Considering total lengths of *S. canicula*, it is thought that this sampling area of North-eastern Mediterranean Sea may be one of the breeding and nursery grounds for this species.

Figure 2. Juveniles of *S. canicula* from North-eastern Mediterranean

Table 1. Morphometric measurements of juveniles smallspotted catshark (n=10) SE: Standard Error

Measurements (mm)	Min	Max	Mean	SE (±)
Total Length	12.5	15.6	14.16	0.374
Fork Length	11.6	14.5	13.17	0.336
Precaudal Length	9.60	12.1	11.00	0.303
Predorsal Length	5.70	7.40	6.67	0.198
Head Length	2.10	2.90	2.46	0.076
Prebranchial Length	1.40	2.10	1.73	0.065
Preorbital Length	0.50	1.80	0.79	0.118
Preanal Length	4.70	6.40	5.66	0.171
Eye Length	0.15	0.24	0.20	0.009

Although localized depletion may have occurred in some areas, surveys have shown that populations are stable or are even increasing throughout the majority of its range. However, the majority of *S. canicula* that are taken by commercial fisherman are discarded. This species is currently listed under "least Concern" on the IUCN Red List of Threatened Species, because there is no evidence to indicate the population has declined significantly [9]. There are currently no conservation actions in the region. Continued monitoring of landing and discarded data is necessary measures important to avoid any future population decline. For that, small length and young individuals should be taken precautions avoid to detection. Adult stocks must be protected. Therefore, necessary precautions should be taken to protect and ensure sustainability of these endangered species in the North-eastern Mediterranean Sea.

ACKNOWLEDGEMENTS

A part of this work was supported by Scientific Research Projects Coordination Unit of Fırat University. Project Number SUF.12.02. A permit for experimental fishing was granted by the General Directorate of Fisheries and Aquaculture, Ministry of Food, Agriculture and Livestock of Turkish Republic.

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